

Application No. 10/520,798
Amendment filed *, 200*
Office Action mailed July 10, 2008
Lin Xiang Sun

Docket number: 0299568-0420-PCT-US

AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including Fig. 1.

Attachment: Replacement Sheet.

REMARKS

Claims 1-33 remain in the case.

Claims 1, 3-5, 8, 20 and 23-28, Figure 1 and paragraph [0034] have been amended in view of the Office Action and to better define what the Applicants consider their invention, as fully supported by an enabling disclosure.

Reconsideration in view of the following remarks and entry of the foregoing amendments are respectfully requested.

ELECTION/RETRITION

The Examiner considers that with the amendment filed on 4/14/2008, only claims 1, 2, 3, 8-9, 11-23 and 28-33 read on the selected species of Group I.

Applicants respectfully submits that what the Examiner considers as two inventions are two alternative embodiments of the present invention (see table below)

Rotor separated from stator by air gap	
A: Magnet fixed on stator and separated from rotor by air gap G	B: Magnet fixed on rotor and separated from stator by air gap G
Air gap G is adjustable	

As described in the application as filed, the rotor and the stator are always separated by an air gap, and a magnet can be fixed either on the stator, in which case, it is separated from the rotor by the air gap, or on the rotor, in which case, it is separated from the stator by the air gap, and the air gap is adjustable.

Since the magnet can be fixed either on the stator or on the rotor, claim 1 uses an alternative terminology, based for example on the second paragraph in *re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975) which states that "made entirely or in part of"; "at least one piece"; and "iron, steel or any other magnetic material" are acceptable terminology. Moreover, MPEP § **2111.01** states that an "Applicant may use functional language, alternative

expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought".

Applicants therefore respectfully submit that claims 4-7, 10 and 24-27 read on the same invention as claims 1, 2, 3, 8-9, 11-23 and 28-33.

DRAWINGS

The Examiner has rejected the drawings as failing to show the air gap recited in the claim. Applicant amends Figure 1 so as to label the air gap "G", as requested by the Examiner, and correspondingly amends paragraph 0034 of the description.

In view of the above and foregoing, it is respectfully requested that the Examiner withdraw his objection to the drawings under 37 C.F.R. 1.83(a).

REJECTION UNDER 35 U.S.C. § 102, SECOND PARAGRAPH

Claims 1-3, 12, 16-18, 20-22 and 30 have been rejected as being anticipated by **Imlach** under 35 U.S.C. § 102, second paragraph.

Applicants respectfully traverse the rejection as follows.

Applicant amends independent claims 1 and 20 to more precisely recite what they believe the invention is, as supported by the application as filed.

Imlach discloses a passive magnetic bearing system in order to support a rotor in a stable position in X, Y & Z axis concurrently. The system comprises directly opposing permanent magnets 244 (on a rotor 24) and 224 (on a stator 22), and an offset magnet 246 on the rotor 22. By combining the directly opposing 244 and offset 246 magnets in the rotor (see Figure 2a), their interaction with the stationary magnet 224 can be combined (see column 3, lines 17-37), thereby creating a first magnetic circuit in repulsion and a second magnetic circuit in attraction for stabilizing the system in respect to both radial and tilt displacements.

Imlach fails to recite a device supplying additional force enhancement to a bearing system along the axis of rotation thereof by creating one flux path, either repulsive or attractive, as recited in amended independent claims 1 and 20.

Claims 1, 20 and 33 have been rejected as being anticipated by **Tanaka et al.** under 35 U.S.C. § 102, second paragraph.

Applicants respectfully traverse the rejection as follows.

Tanaka et al. discloses using magnets and housings configures in a way to prevent damage to a permanent magnet bearing, by applying a smaller gap between the magnet's housing than the gap that exists between the permanent magnets, thereby preventing the solid magnet materials to touch or magnetic foreign materials to become trapped in the gap. **Tanaka et al.** shows a first magnet 44 and a second magnet 41 of a smaller outer diameter (see Figure 1), the top surface of the top surface 44a of the larger magnet 44 is housed lower than the top surface of a case 45. As a result, there is more than one air gaps: i) air gap between the first magnet 44 and the second magnet 41, shown as B in Figure 2; ii) air gap between the case 45 (bottom element in Figure 2, holding the magnet 44) and the case 37 (holding the magnet 41) and shown as A in Figure 2.

In view of the above and foregoing, it is respectfully requested that the Examiner withdraw his rejection of claims under 35 U.S.C. § 102, second paragraph.

REJECTION UNDER 35 U.S.C. § 103, FIRST PARAGRAPH

Claims 8, 9, 28 and 29 have been rejected as being unpatentable over **Imlach** in view of **Ono et al.** under 35 U.S.C. § 103, first paragraph.

Applicants respectfully traverse the rejection as follows.

Applicants has amended independent claims 1 and 20 to ore precisely recite what they believe the invention is, as supported by the application as filed.

None of **Imlach** or **Ono et al.**, alone or in combination, teaches or even hints

at a device and method as recited.

Claims 13, 14, 31 and 32 have been rejected as being unpatentable over **Imlach** in view of **Johnson et al.** under 35 U.S.C. § 103, first paragraph.

Applicants respectfully traverse the rejection as follows.

None of **Imlach** or **Johnson et al.**, alone or in combination, teaches or even hints at a device and method as recited.

Claim 11 has been rejected as being unpatentable over **Imlach** in view of **Guy** and **Thomas** under 35 U.S.C. § 103, first paragraph.

Applicants respectfully traverse the rejection as follows.

None of **Imlach** or **Guy** or **Thomas**, alone or in combination, teaches or even hints at a device and method as recited.

The rejections of the claims are believed to have been overcome by the present remarks and the introduction of new claims. From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such an action is earnestly solicited.

Respectfully submitted,
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